JACG NEWSLETTER

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THE JERSEY ATARI COMPUTER GROUP

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From the Editor's Desk...

The mailbox disgorged, among many computer related pieces of mail, my April issue of Family Computing. I enjoy this magazine second only to ANTIC since it treats the Atari with considerable respect and contains much Atari-usable material. The Editor, Claudia Cohl, strikes me as a savvy lady who knows her way around the world we love to touch. I had the pleasure of being interviewed by her several months ago, which re-affirmed my impressions.

Her editorial was a bit unusual this month. It was topped by a cartoon balloon filled with the words, "I Want To Be A User." She was quoting a man named Richard who had actually said, "I used to be a hacker. Now I want to be a user.", during a symposium at the winter's Consumer Electronics Show in Las Vegas. She considered Richard, whose last name she apologized for not remembering, as a star because he actually was pointing out what many of us have been feeling for some time. Like our faithful old Chevy what we really want our computers to do is just get us from point A to point B. Oh, sometimes rather elegantly, to be sure, but we want to turn the key and have the machine do its thing.

We are glad we know how the thing works, and can even occasionally do a tune up or two, but we're getting past that era. We want software that gets the job done, works every time, and gives us a minimum of learning curve time. That is Richard's point. And we think that is where the smart money is heading. The hackers will always be with us (thank heaven) but it may well be that the promise of the personal computer depends on Richard's philosophy.

By the way, Richard also happened to be from New Jersey. Who did I know named....Dick. Sure, it was our very own, famous in his spare time, Dick Kushner. I acted as liaison between them and it looks like Dick will write for Family Computing and has added yet another admirer to his growing fan club.

Frank Pazel

Frank Pazel
Editor-in-Chief, JACG Newsletter

In This Issue

MARK YOUR CALENDARS!!

JACG Meeting Schedule

May 10, 1986
June 14, 1986
July 12, 1986

THE VIEW FROM WHITE HOUSE.

The Presidents' message.
by Bill Martin

HOT LINE TO THE PRESIDENT. - (201) 534-6349

My special thanks to Jerry Frese, Director of Programs for bailing me out at the March meeting. Long term plans and last minute emergencies seemed to cross paths and, as it happens, all when you least expect it. That's the reason that running a club this size is not a one person job. It takes the cooperation of a lot of people to put this show on and when Scott had a last minute emergency, Jerry filled in. Another thank you to Joe Kennedy, Membership chairman, writer of the minutes, presenter of demos and disk of the month editor who never seems to tire. He came up with some last minute demos to fill the promised (but missing) ST section. Not only could Scott not make the meeting but he had the 800, (with all of the cables), the ST, the door prizes, the program to draw the door prizes and some of my notes. So I guess we will play some catch up ball at the April meeting. One more big thanks and that's to Bill Brandt and the Robotics group who mesmerized the audience with a mouse that roared.

THE DRIVE THAT WENT AND THE PARTS CO-OP. My 1050 will not be the first donation to the parts bin co-op. Last month I went to the computer show in Parsippany and purchased a new diode/collector for $1.00. Actually I bought two. One to take apart and one to use. It was not a case of just switching parts but I was able to re-build the new part by cutting the arms off the existing part and gluing them to the new part. A little solder and 15 minutes gave me back my 1050. I ran a borrowed "Zero track detector" program and it was right on the nose. Proud of myself? You bet! I am going to donate my MPP1000C modem though so we have the first of what I hope turns out to be, many parts. Who knows, maybe by next year we will need a Chairman of parts co-op.

LATEST ON INCORPORATION is that Atari has gotten back to me with the name of their Corporate Counsel. Thanks to Neil Harris, who also added in his CIS note that he didn't think it would be a problem. My request letter went out the next morning. To be continued.

I'm informed by our printer that the new letterhead, envelopes and the brochure will be ready by the time you read this. I've been promised that it will be worth the wait. One of my problems is that I want it yesterday, whatever it is.

At the April meeting, I will be doing my first demo of an ST program. It's called Print Master and boy, does it "remind" me of "Printshop". Do Ursem will be presenting ZOOMRACKS, a combination data base, word processor, card file and project organizer. It is written by Paul Heckel, author of the book, "Elements of Friendly Software", published by Warner. If you can't wait after seeing it, it's available at local dealers for about $59.00, listing at $79.95. Paul has made a special offer to the group of a discounted price of $48.00 each for 1, down to $40.00 each for 13 with intermediate price adjustments. I had originally planned to do a review in this issue of the newsletter but I haven't had time available. Thanks Don! As a reward for your efforts, the demo copy is yours to keep. You'll find that it works well with your 1 meg. system.

Lately, I've been getting calls and letters from non-members, some of whom are from out of state, asking for technical assistance. What really bothers me is that they assume that we have the time to sit down and write a letter or call long distance at our expense. In the business world, a letter costs a corporation over $100.00 to produce. A long distance call costs up front money. None of these people ever consider a stamped, self addressed envelope or even asking us to call back collect, or have considered my time as being valuable. We, the membership have been paying the freight in the past, and I personally think that it should cease immediately. Unless I hear differently from you, the membership, any requests by mail will receive an application to join the club rather than an answer. Telephone solicitations will be greeted with a similar response.

GOOD NEWS AND BAD! First the good news. The Bell Lab's Atari Computer Group has a new president. He is Tony Picciutti and he has volunteered to replace Herb Lehner effective immediately. Our thanks to both of these fine gentlemen. They have been generous in helping us to maintain our high quality meeting standard.

MORE GOOD NEWS, We have found a Sales Manager for the club. Gary Gorski will now be handling all of the club group purchases and some other things which you may find interesting. More on that as we get the details worked out.

NOW THE BAD NEWS. Atari has turned us down in our quest to use the name Atari for purposes of incorporation. Scott is checking and will let us know what our options are at the April meeting.

MORE BAD NEWS. Bell Labs has informed us that the auditorium will not be available for three months, July, August and September. We are in the process of trying to find an alternative for that period.

HELP WANTED

The following positions are available for a JACG volunteer, or two, or three... Please see my column in the March, 1986, JACG newsletter for details on the Old postings.

OLD POSTING.

Demonstrator's at the meetings. See or call Jerry Frese.
Language Sig Teachers. Still looking.

NEW POSTING.

Question and Answer Editor for the newsletter. Make notes at the meeting on the questions and answers that are offered and submit same to the Editor in some semblance of journalistic order. Keep file or data base so that we can track recurrent

See bottom, Page 3

MARCH MEETING HIGHLIGHTS

Reported by
Joseph S. Kennedy

The meeting was preceeded by the usual question and answer period. Jerry Frese then opened the meeting in the absence of both Bill and Scott. With Scott not able to attend due to car problems (and all the computer equipment at his house), Jerry supplied his computer for the meeting; Chris Ahlers wired it so that we would be able to get a picture on the projection TV and Herb Lehner rushed home to bring in a portable TV so that we would have sound for the demos. Thanks guys for the extra effort!! The club decided by a show of hands to participate with a table at the Trenton Computer Fair.

Jim Callari and Eric Riech demoed Goonies from Datasoft. This animated take-off from the movie of the same name requires the player to use the two on screen characters in tandem to solve the puzzles at each stage of the game.

Dana Kennedy and Joe Kennedy demoed several educational selections from the club program library. Dana was working on the railroad to improve her spelling with ABC Train. She also was spelling with SpellSam where the computer spoke the spelling words to her. Also, the program Homework which allows you to enter your own questions was demoed.

Bob Knoblauch and Doug Van Hook of the Robotics SIG gave us a well received demonstration of the robot designed and built by the SIG. The robot is programmed by joystick input throught the ATARI. The SIG has agreed to make available kits so that each member could build his own robot. Details are in the March newsletter. Congratulations are in order for the entire Robotics SIG for a job well done. Now how about some other SIGs forming since it can be seen what determined ATARIANS can do! (Topics such as home-made hardware, programming, education, etc. come to mind.)

Jerry Frese demoed Logic Levels from Fisher Price. This program makes one think how to logically and efficiently move a ball through a maze.

Tony Pellechio, our cartoonist in residence, demoed another Oldie But Goodie in Pool 1.5. This early ATARI game still holds one's interest through the variety of options allowed, including an instant replay option.

Frank Pazel announced the invitation from JACS to their April 15th meting which will feature Sig Hartman or Len Tramiel. Reservations for this meeting had to be called in by today. For his contribution to Oldies But Goodies Frank demoed Bishops Square/Maxwell's Demon. Bishops Square is a computer version of the old, old keychain picture slide squares. Maxwell's Demon is a game based on the separtion of different gas molecules. Frank also demoed Hot Lips. Here the idea is to lure your tormentors through a set of chomping jaws. The music added an appealing touch.

Dick Barclay demoed his program, Math Facts, which he originally wrote to help his children with their math. The program is adjustable for each person using it and can be changed as they improve. The program is not copy protected so that you can make an individual disk for each child.

Jim and Eric came back up on stage again. This time they demoed the new Electronic Arts program, Racing Destruction Set. This race program allows you to develop your race vehicle and then determine which of many gravity systems in the solar system you want to race under. The race is shown with split screen so that one racer does not hold back the other.

Among the items raffled off was a numeric keypad.

April - Graphics
May - Atari Safari

****
GIVE A BIT!!
****

Here is Dana Kennedy, bravely and smartly demonstrating ABC Train during the March JACG meeting. She is the daughter of our faithful newsletter columnist Joe Kennedy.

From Page 2

questions. Would also refer mailed in questions to Hot Line volunteers for response. Interface with International chairman. Call me on the HOTLINE.

Social Chairman. Examine the possibilities of having some sort of social event such as a picnic or holiday party. Call me on the HOTLINE.

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* JACG HOTLINE 534-6349 *
* GET THE LATEST NEWS IN ATARIWORLD *
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The Talking Programmer!

A J.A.C.G. EXCLUSIVE

by Frank Pazel - J.A.C.G.

A sensational new voice-actuated product is about to make its appearance on computer store shelves. It allows the beginner through advanced BASIC programmer to develop code which is thorough and complete by speaking simple plain English commands into the microphone which feeds joystick port 1! Initially developed for the military the system proved inadequate for real-time applications and went begging for a market. Upstate New York electronics manufacturer Albert Canard of A-F Industries, producer of the famous Universal Interpreter (see JACG Newsletter, April 1984) has another winner with this Atari conversion from the Adam.

The product, expected to reach the distributor market the first of this month, consists of a microphone-headset, an interface box, and two disks full of programs. As with the UI, power is picked up directly from the computer, no small selling point for those of us up to our three-way plugs in those cumbersome Atari power supplies. Directions are very complete and the instruction manual is well illustrated. All prompts appear on the workscreen, anyway, so reading the manual is almost unnecessary. Help screens are available at each level.

The key to this product is simplicity. After plugging the components together with their polarized plugs you just boot up disk #1, which is titled the Atari Programming Instructor/Listener. You will be pleasantly surprised to hear instructions over your earphone telling you to slowly speak the key BASIC words as they appear on the screen. Each word is repeated three times so the computer can learn to distinguish your particular accents and diphthongs. A small bar chart of the standard word is compared to your spoken word to verify accuracy. When satisfied of the relative acceptance the program moves on to the next word.

You can teach the program to identify up to 128 commands, with their supporting syntax, but you can get started by teaching it only a few simple commands like PRINT, GOTO and XIO LOCK, #3, 0, 0, FILE2$. The only thing you are required to teach it is the opening section on numeric sounds. Obviously, the need for precise interpretation of the numbers 1 - 0 is germane. One neat feature is the ability to substitute sounds for either individual words or entire statements. Just for fun I defined the clearing of my throat to be a SHIFT-DELETE statement and a Bronx cheer to equal REM. It worked great until I developed a sore throat this spring and accidentally erased several lines before realizing it.

Using the program is a snap. Just speak the line number into the microphone followed by the statement. A second disk, the Formatted Output/Ondographic Language, turns what is an interesting piece of equipment into an absolute delight. While this software is active you can simply state what you want the program to do and it interprets the phrase into BASIC statements. For example, saying "Now have the computer receive words" automatically generates a character string input statement with matching DIM statement in line 5. You can further individualize this feature to recognize key words or phrases like "listen" for character string input or "talk" for insertion of a trailing semicolon plus character string. It's just fantastic.

Additional software is now being developed, several in other languages (German, French, Serbo-Croatian). In spite of the ease of writing your own PM graphics routines in plain vanilla BASIC one of the most popular sections of this program probably will be the Player Missile Graphics module which will allow you to define the missile(s) you want and enter them anywhere in your BASIC program by just telling the computer about it. A library of PMs comes with it and they can be modified to meet your needs.

The Otsego County manufacturer anticipates the cost of this program to be about $49.95, his attempt to support the idea of "Power Without The Price." He is in negotiations with Atari regarding marketing channels. Reportedly, they may acquire Mr. Canard's product for themselves and offer it to the Atari community for either $12.95 or $348.88, depending on whether or not it has three color packaging. Availability is presently only for the eight bit machines with a minimum of 27K. The program is considered too simple and easy to understand to be re-written for the ST.

I realize this package is not for everyone. Nothing could persuade those dyed-in-the-wool programmers that this audio technique is superior to traditional keying. But for us beginners who are all thumbs it might be just the answer to developing our own database or telecommunications program. A-F Industries

will mount a national advertising campaign this month in major market magazines. They will be using the two-stage identifier of Atari PRogramming Instructor/Listener - Formatted Output/Ondographic Language. Look out for it under its acronym.

SATELLITE T.V.

by Kenneth J. Pietrucha - JACG

High above the equator, at an altitude of 22,300 miles, there exists a band of satellites circling the globe in what is refered to as a Geostationary Orbit. To the uninitiated, these satellites have the same rotational speed as the earth and appear to us on the ground as objects fixed in space.

The Clarke Belt, as it is known, was fictionalized over forty years ago by science fiction writer Arthur C. Clarke. It is now a reality.

The satellites in this belt continuously transmit everything from Home Box movies to Trans-Atlantic phone calls. They are dotted across the equator and are separated by no more than two or three degrees. Each of these "Birds" as they are called, contains many transponders, each of which is capable of sending television pictures back to earth.

While owning a system which allows you to watch hundreds of channels is becoming quite fashionable, local ordinances are springing up which restrict the dish antenna necessary to make it work effectively. A recent ordinance in my town of Cranford, does not allow for roof top installations of a dish. If I were to put a dish on the ground, I would want to know before spending a lot of money, what my chances of "seeing" the satellite were. Unlike a regular television antenna, the dish needs a line of sight to the satellite. Even tree branches will hinder the reception.

To determine if you have a clear line of sight to the satellite, you need to know your latitude and longitude. It is probably on the deed to your house, or you can call you town engineer. At least get the coordinates of your town. Here in Cranford, I am at 40°40' latitude (40.66 decimal form). My longitude is 74°15'or 74.25 as a decimal. The only thing missing is the location of the satellite. Since they are all over the equator, their latitude is zero. The longitude for North American satellites above the equator runs from 69° to 143° west longitude. The list I used as a source showed a different "Bird" every two to four degrees. Here are the longitudinal degrees of a few of the satellites.

SPACENET 2 - 69°
TELSTAR 302 - 86°
WESTAR 4 - 99°
WESTAR 5 - 123°
AURORA 1 - 143°

After running the program I have included in this article, you will get the azimuth and the elevation for the dish you wish to aim.

The azimuth is the number of degreees from true north (not compass north) counted clockwise from zero all the way around to 360 degrees. This tells you which direction to swing your antenna. Next is the elevation, which tells you how many degrees to raise your antenna. If it were 90°, it would be straight up, but since we are not at the equator, the number of degrees will be less. The number of degrees depends upon your location and the satellite you wish to sight.

If you call your town engineer for the coordinates of your town, you might also like to ask him how far off true north is from magnetic north for your area.

For my survey, I picked my coordinates off a good Mercator projection map (wall map) and used the star Polaris (North Star) to determine true north. If you get an accurate sighting on this star, you should be less than one degree off true north.

```
5   REM TVRO DISH POINTING PROGRAM
6   REM BY KENNETH J. PIETRUCHA JACG 10/17/85
7   REM REFERENCE EQUATIONS "73 MAGAZINE"  :REM
JAN,1982 PG-60
10  GRAPHICS 0
15  DEG :REM YOUR WORKING WITH DEGREES
20  PRINT "ENTER YOUR LATITUDE ";: INPUT LAT
30  PRINT "ENTER YOUR LONGITUDE "; INPUT ML
40  PRINT "SATELLITE LONGITUDE ";:INPUT SL
45  PRINT :PRINT
50  LD=(SL)-(ML)
60  IF  LD>81.3 THEN  PRINT "SATELLITE  IS  BELOW
YOUR HORIZON":GOTO 200
70  A=COS(LD)*COS(LAT)
80   AD=-ATN(A/SQR(1-(A*A)))+90:  REM  CALCULATES
ARCCOS(A)
90 IF AD>81.3 THEN PRINT "SATELLITE IS BELOW YOUR
HORIZON":GOTO 200
95  TLD=SIN(LD)/COS(LD): REM CALCULATES TAN(LD)
100     AZ=180+ATN(TLD/SIN(LAT)):REM     CALCULATES
AZIMUTH IN DEGREES
110 N=A-(0.151):REM NUMERATOR OF EL
115 D=SQR(1-(A*A)):REM DENOM OF EL
120 EL=ATN(N/D):REM ELEVATION-DEGS
130 PRINT "TO LOCATE THE SATELLITE "
140 PRINT "POINT YOUR ANTENNA"
150 PRINT "TO THE FOLLOWING COORDINATES"
155 PRINT :PRINT
160  PRINT   "AZIMUTH=  ";AZ;"  DEGREES":  REM
REFERENCED CLOCKWISE FROM TRUE NORTH
170 PRINT "ELEVATION  ANGLE= ";EL;"  DEGREES":REM
REFERENCED FROM THE GROUND UP IN DEGREES
180 PRINT :PRINT
200 PRINT "ENTER ANOTHER SATELLITE'S LONGITUDE"
205 PRINT "TO TRY AGAIN"
210 PRINT :PRINT
215 GOTO 40
```

After writing this program I found several articles on satellites in some electronics hobby type magazines. The articles had the antenna pointing coordinates for different cities and satellites. I used this information to check my program and got the same results.

The program assumes you are located in the northern hemisphere. If you live below the equator then use a minus sign before your latitude. Below the equator (southern hemisphere) you will have to modify line 100 by deleting the 180. Use a minus sign before your longitude too.

The bottom line after all this is to find a satellite or range of satellites which you can "see" from your location.

From my location in Cranford, Space Net 2 at 69° west longitude requires an azimuth of 172° and an elevation of 42.7°. Aurora 1 at 143° requires and azimuth of 255.8°, but its elevation is probably too low at 7.3° to be useful to me.

The unfortunate part of this, for me, is my house lies directly in the area of the desired azimuth headings. Some day you may be watching satellite television, but it looks like I'm stuck with the VCR.

Silent Service

The Submarine Simulation

Reviewed by Thomas Pluck - JACG

How many times, while watching a WWII movie like Das Boot (The Boat) or Running Deep have you had a deep inner craving to captain a submarine? Well, now your cravings will be satisfied. MicroPROSE has come out with Silent Service: The Submarine Simulation, a software "art", as I like to call it. Reading the manual is a must; it not only tells you how to act in the simulation, but tells historically correct data on the u-boats, the torpedos, strategies, and the enemy. It even gives a detailed map of the South Pacific.

Silent Service allows so many variations of play, it becomes hard to choose which you like best. First, you can take Torpedo/Gun Practice, in which the enemy is a bunch of captured ships, anchored and immobile. This is good for the first-time player; it is fun, challenging, and simple. Next is Convoy Actions, in which you hunt down and destroy a convoy of enemy ships. This is what I find the most fun. There are many situations to choose from and they provide an almost infinite amount of variations. The hardest variation is War Patrols, in which you patrol the ocean for convoys, destroy them, and have enough fuel to return to base. This variation is good for the experienced player and also has many situations to choose.

The menu you get next is called the reality level menu. This is the part which really makes the infinite number of variations. You choose the visibility factors, whether you want a few dud torpedos to add to the challenge, the overall difficulty level, and more.

You can really "get into" the game sometimes. You can run aground, get bombed, get captured and even dive to depths in which the water pressure will crush your vessel. The game has six screens: the conning tower (an icon driven menu), the periscope, the bridge view, a map room, the gauges, the damage report screen, and the quartermaster's log. The log shows the amount of torpedos left, the ships you've sunk, and the tonnage. The graphics are excellent, often too realistic. Heck, you can even release fake debris to make the enemy think you're dead. You'll sometimes find yourself cursing the other ships and really wanting them to just explode into tiny little bits for no apparent reason.

I recommend this game not only to u-boat freaks, but to any Atari owner who is a graphics enthusiast. There are only two flaws that I have found in the whole simulation. One, you can't erase just a few unwanted names off the Hall of Fame; you must erase none or all. The second flaw is that if you accidentilly pick War Patrols, There is no way to get out of it. On the conning tower menu, instead of the usual End Game option, Continue Patrol has replaced it. The Continue option should have just been added on.

Overall, Silent Service is one heck of a great game. I'm an Infocom freak, and this game has kept me from finding out how to get the guncho spell in Enchanter for a month now. For those who enjoy software other than simulations, do not affiliate me with them- I am a lover of all software products that are worth my while. For now, though, keep your periscope up and your torpedos a-firing!

This review submitted by: Pluck Rogers of the 25th century!!!

The Australian Atari Gazette (Melbourne)

Whirr - Click - Zap!

Members of the Robotics SIG point out some of the finer points of their first robots to one of the many youngsters who were mesmerized by the machines.

The JACG younger set is entranced by the antics of the Robotics SIG's first attempt at controlling a machine with the Atari computer.

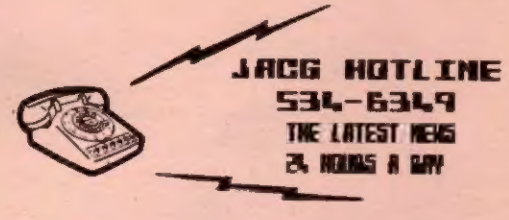
DON'T FORGET!
Contribute an article this month.

520ST To The Rescue

Newton, NJ -- The Newton Fire Patrol is the first in New Jersey to have a computer installed in an emergency vehicle. They have an Atari 520ST computer up and running inside their truck. Bill Ferer of the Fire Patrol has spent months looking into the possibility of having a computer on the road. Everyone he spoke to said it could not be done. Bill's not one to take no for an answer. After talking with Tom Kaceniak of Softec in Newton they agreed on giving it a try. The Atari 520ST was their choice. It has the power without the price and was easy to use for someone with no knowledge of computers.

With the help of Softec a data base was setup and all agreed it was a go. They currently have a file on hazardous material and a guide number to look up the proper treatment of the chemical. Critical information is available at the press of a key. Also on file is a list of equipment that is available county-wide in an emergency or fire. Future plans include adding a data base of diagrams of all buildings showing the interior design and exterior locations for fire trucks.

The Newton Fire Patrol, along with Softec, will be happy to help all other fire fighters in joining them to become automated and to answer whatever questions they may have. Contact Softec at 171 Spring Street, Newton, NJ 07860, (201) 579-2944.



EASTER EGG

Short and Sweet

Donkey Kong Jr.: On title screen hit space bar and type BODA.

Caverns of Mars and Phobos: To skip levels simultaneously press SHIFT-CTRL-TAB keys.

Atari Touch Tablet: Position cursor over Atari symbol in upper left hand corner and press RETURN for strange, but pretty, music.

Pitfall: Start the game with the OPTION key for unlimited lives.

NOW IT'S YOUR TURN. Send those hidden goodies you've discovered to the editor so all can share in the wealth.

A LOOK INTO THE TWILIGHT ZONE
by Richard Kushner - JACG

EDITOR: I can't publish this article. It is much too outlandish for anyone to believe.
AUTHOR: Well, how about if I make it sound like a fairy tale?
EDITOR: We could try that. But, really, its so far beyond belief that even as a fable it strains all credibility.
AUTHOR: Yeah, I know. Too bad its all true.

This is a fantasy..... pure fantasy.

Once upon a time there was a widget maker named Nelson Brindell. He loved to tinker and, from time to time, managed to invent something that someone was interested in selling (and buying). One day he invented a widget that hooked to the Video Box so that people could play games on the Box. And people liked it very much and made Nelson a wealthy man. So successful was Nelson that, as often happens, a large company (in this case the Wilson Sisters company) offered him lots of money to buy his company. And he sold it and went off to invent more widgets (eventually producing ones that walked, talked and even made pizza.)

Now the Wilson Sisters had an idea that they could capitalize on Nelson's work to make his widget into a product to compete with the Avocado, a well known character manipulation device invented by those famous brothers, Stephen, Woz, Darrel and their other brother Darrel. And they named their device Katanga, a Sanskrit word having no English equivalent. And many grew to love and support the Katanga and heap abuse upon the Avodado and its ilk. And people liked the Katanga very much and all was well.

For awhile, at least. For on the other side of town, the Admiral Tool and Die Company, headed by John Trample, thought it could use its cunning methods for cutting corners to make an Admiral device that would do everything the Katanga and Avocado could do, but at half the price. And they proceeded to do just that and mayhem descended upon the world of widgets, with prices dropping faster than ....., well, faster than just about anything you can imagine. And many grew to love the Admiral and heap abuse upon the Katanga (not to mention the Avocado).

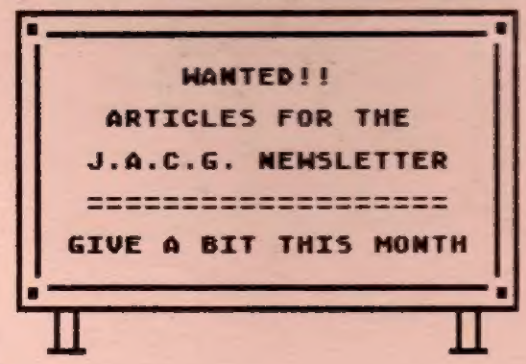
Now pay attention, because the story gets very confusing at this point. So confusing, that, if this were a soap opera, the next paragraph would take at least six months to tell. (Diagrams of all the moves and counter moves that follow are available upon written request and payment of a $5.00 handling fee.)

Ray Major, who dreamed up the Katanga, left Wilson Sisters and invented a better Katanga, which he called the Freundlich. While he was doing this, John Trample left Admiral T&D (claiming that the state of Pennsylvania was not big enough for all of his family) and bought the Katanga from the Wilson Sisters... lock, stock and barrel (a move applauded by the Wilson Sisters who wanted to get back to their first love, vaudeville.) Hiring the designer of the Admiral, Hashnish Shirka, (by luring him away from his former company), Trample set out to build a better widget, the Super Katanga. Not to be outdone, Admiral T&D hired good old Ray Major and his Freundlich to do battle from their side of the city.

And so you are faced with the totally implausible situation where lovers of the Katanga now support the Super Katanga, which actually comes from the Admiral T&D Company, and lovers of the Admiral now gather around the Freundlish, even though it actually comes from the Katanga Company (by way of the Wilson Sisters, who by the way, opened at the Atlantis Casino in early March, to rave reviews.)

If you're still with me, I have a proposition for you that concerns a certain bridge that it is rumored may be for sale.....

EDITOR: I'm really sorry. I've read the article over and it stretches logic too far.
AUTHOR: Gee, it is, after all, the April issue and maybe you can pass it off as a spoof?
EDITOR: As an author, you know there must be an element of truth in satire or it fails.
AUTHOR: But, sir, the story is true, only the names have been changed to protect the innocent.
EDITOR: Give me a break. Do you think I was born yesterday? Why not see if MAD Magazine is interested? Just go away and leave me alone!



Mathematics: Form and Function

by Saunders Mac Lane

Book review by Donald Forbes--JACG

Program Chairman:

For the first time in the three thousand year history of mathematics, someone has just written a book that shows HOW ALL THE PIECES FIT TOGETHER.

We are honored to have with us here today the only person who could have written it, Professor Saunders Mac Lane, of the University of Chicago. Dr. Mac Lane has been working on the book since his 70th birthday, on August 4, 1979.

He was born in Connecticut, the son and grandson of Congregationalist ministers. His career spans Yale, Harvard, Goettingen, presidency of MAA and AMS, and VP of the National Academy of Sciences. This podium at Bell Labs has hosted many Nobel laureates. For a mysterious reason, there is no Nobel prize for mathematics, or our guest would have been nominated years ago. He is America's most distinguished mathematician and by far its leading teacher and generalist. Let me present the Professor.

LOUD APPLAUSE

Thank you. Historically, there have been many proposals for the organization of Mathematics or of parts of Mathematics. For the Greeks, Mathematics was geometry, and they formulated real numbers and algebraic operations only in geometric terms.

In the 18th century, Mathematics appeared largely in the development of all aspects of the calculus; this was a natural reflection of the wide opportunities this development offered for formal manipulations and for extensive applications.

Subsequently the extraordinary fruitful properties of holomorphic functions made complex variable theory a center about which (much of) Mathematics could revolve. There were competing organizations. In analysis, rigor was enshrined under epsilon and delta. In geometry, Felix Klein proposed that the many varieties of space provided by non-Euclidean and other geometries could be classified and hence organized in terms of their groups of symmetries -- the full linear group, the orthogonal group, the projective group, and others.

In a way this organization did include complex analysis as the study of groups of conformal transformations; this approach amounts to putting a heavy emphasis on geometric function theory and the overuse of epsilon-delta methods. Currently the remarkable properties of group representations and their use in arithmetic and physics again suggests that group theory provides an effective organization.

This variety of proposals for organizations reflects the diversity and richness of Mathematics.

Set theory and logic provide a standard 'foundation' for Mathematics. Alternatively, set theory and category theory may be viewed as proposals for the organization of Mathematics. The canons of category theory emphasize the importance of considering not just the objects but also their morphisms. They also emphasize the use of universal constructions and their associated adjoint functors.

My book is intended to describe the practical and conceptual origins of Mathematics and the character of its development -- not in historical terms, but in intrinsic terms.

Here is a table of human activities and their resulting Mathematical formulation:

ACTIVITY	FORMULATION
Collecting	Set (of elements)
Counting	Successor; order
Comparing	Bijection
	Cardinal number
Computing	Rules for + and *
	Abelian group
Rearranging	Permutation group
Timing	Linear order
Observing	Transformation group
Shaping	Collection of points
Measuring	Metric space
Moving	Rigid motion
	Rate of change
Estimating	Continuity, limit
	Topological space
Selecting	Subset
Arguing	Logical connectives
Choosing	Probability

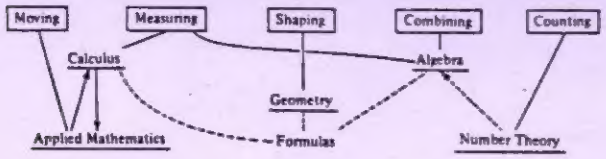
We cannot realistically constrain Mathematics to be a single formal system; instead we view Mathematics as an elaborate tightly connected network of formal systems, axiom systems, rules, and connections. The network is tied to many sources in human activities and scientific questions.

The subjects of Mathematics are also tied or connected to other parts of human knowledge, and most especially to the various sciences. Geometry is tied to mensuration, architecture, surveying, navigation, and, on a more sophisticated level, to space, time, and space-time as these enter into physics.

Calculus is tied to mechanics, dynamics, and many other parts of theoretical physics. Differential equations and Fourier analysis are likewise tied to physics -- as is also vector analysis, complete with all the sophistication of dual spaces and tensor products. Calculus is also tied to economics, for example, in the use of marginal concepts in Mathematical economics. The number of such connections between Mathematics and science is very great -- and often these connections go to subjects which are in the 'middle' of the network of Mathematics, and not just to the basic subjects at the edge of the network.

Since we have described Mathematics as a network, we must specify the nodes of that net. Here we have the five traditional subject subdivisions. Number Theory is described by its subject matter. Algebra is the manipulation of formulas. Geometry is initially the science of space. Calculus is the science of variable quantities. Applied Mathematics is (at first) largely the study of particle and continuum dynamics by the methods of calculus.

This first picture of the network is clearly far too simplistic:



We have already sketched some pieces of such a network: in Chapter Five with a full-page diagram of functions, transformations and groups; in Chapter Six with a full-page diagram of the interactions of the concepts of the calculus; and in Chapter Nine with a full-page diagram of the Interconnections of Mathematics and Mechanics.

In the book we have thus illustrated many subjects and branches of Mathematics, together with diagrams of the partial networks in which they appear. The full network of Mathematics is suggested thereby, but it is far too extensive and entangled with connections to be captured on any one page of this book.

The book begins and ends with an attempt to answer philosophical questions. The questions come in six groups:

Q: What is the ORIGIN of Mathematics? A: The human capacity to make generalizations and abstractions.
Q: What is the ORGANIZATION of Mathematics? A: Mathematics is remarkably ramified. For these reasons our study did not provide any single neat table of organization, with explicit lines of command, control, and communication.
Q: How are the formalisms of Mathematics derived? A: They become forms only when finally pinned down by meticulous definitions and axioms.
Q: How does Mathematics develop? A: The desire to understand is the most important dynamic.
Q: Is there an absolute standard of rigor? A: Mathematics has access to absolute rigor -- because it is about form and not about fact.
Q: What are the correct foundations of Mathematics? A: There is no single and absolute foundation for Mathematics.

Do you have any questions?

Question: You devote 20 pages to category theory, discovered by you and Samuel Eilenberg; will category theory replace set theory? Answer: Set theory and category theory may be viewed as proposals for the organization of Mathematics. Neither organization is wholly successful. Categories and functors are everywhere in topology and in parts of algebra, but they do not as yet relate very well to most of analysis. Set theory is a handy vehicle, but its constructions are sometimes artificial. Moreover, it is clearly far too general; as Hermann Weyl once remarked, it contains far too much sand. We conclude that there is as yet no simple and adequate way of conceptually organizing all of mathematics.

Question: Does you work overlap Bourbaki? Answer: With Bourbaki, we hold that Mathematics deals with 'mother structures.' However, that magnificent 1940 monster volume is a splendid formal organization of many advanced topics formulated in blissful disregard of the origins and applications which are important to our present purpose.

Question: What about the Riemann zeta conjecture? Answer: It is still a conjecture. There is a ditty to the tune of 'Sweet Betsy from Pike' that goes:

Here's to the zeros of zeta of s
G. Bernard Riemann has made a good guess
They're all on the critical line, said he
And their density's one over 2 pi log t.

This conjecture of Riemann has got them all started
But many a good man from this life has departed
Without ascertaining with suitable rigor
What happens to zeta when log t gets bigger.

Question: You say your book is essentially self-contained with all terms defined. Do you expect it will become a bestseller and required reading in colleges, and that it will come out in paperback with a flashy cover? Answer: I would like to think so.

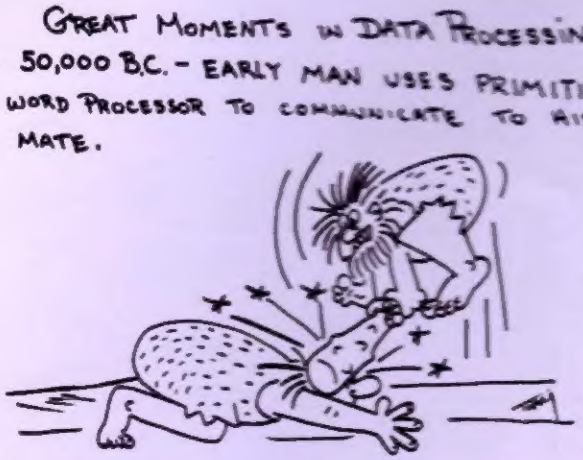
Question: Do you think your book will start another paradigm shift (like the one in category theory) from the specialist view to the generalist view in mathematics research and education? Answer: It is much too early to tell.

Program chairman: Thank you, Dr. Mac Lane.

THUNDEROUS OVATION

Program chairman: The book (476 pages, 116 illustrations, $42) is published by Springer-Verlag New York. You can write him at 5712 S Dorchester Ave in Chicago or call him at 312-962-7330.

There is a resolution before the House and Senate that the President proclaim the week of April 14 through April 20, 1986 as 'National Mathematics Awareness Week.' Our speaker has given us our own Awareness Week and we are most grateful to him. Thank you and good day.



GRAPHIC SHOP
ANTIC CATALOG

Reviewed by
Joseph S. Kennedy

Were I Billy Crystal and "Graphic Shop" and can of Diet Pepsi I would have to say "Mah Velous Dahling. Simply Mah Velous!". Graphic Shop (GS) is a companion tool to Broderbund's Print Shop (PS) that allows you to use your graphics created with MicroIllustrator or Micropainter to make icons for Print Shop.

From the school of "a picture's worth a thousand words" here comes 4000 words. Figure #1 is a MicroIllustrator graphic file. When loaded into GS it can be converted into a PS icon either as a full screen - Figure #2 - or as a partial screen - Figure #3. As you can see the compression needed to make an icon from a full screen causes some loss in detail, but the partial screen gives very acceptable detail. The graphic is then saved on a PS graphic disk and can be used in any of the PS modes. Figure #4 is the partial screen (Figure #3) used in the Sign mode to create a Reading Award.

Figure 1

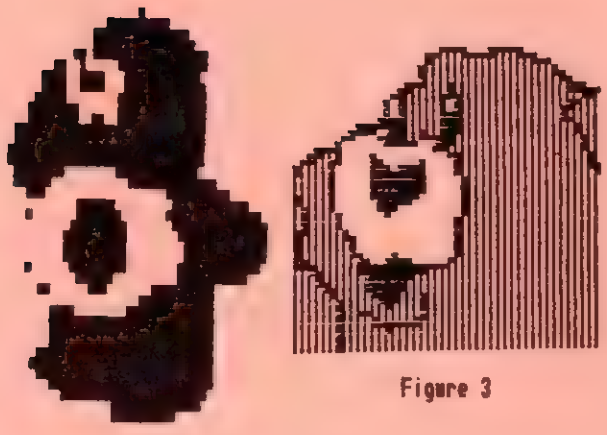


Figure 2

Figure 3

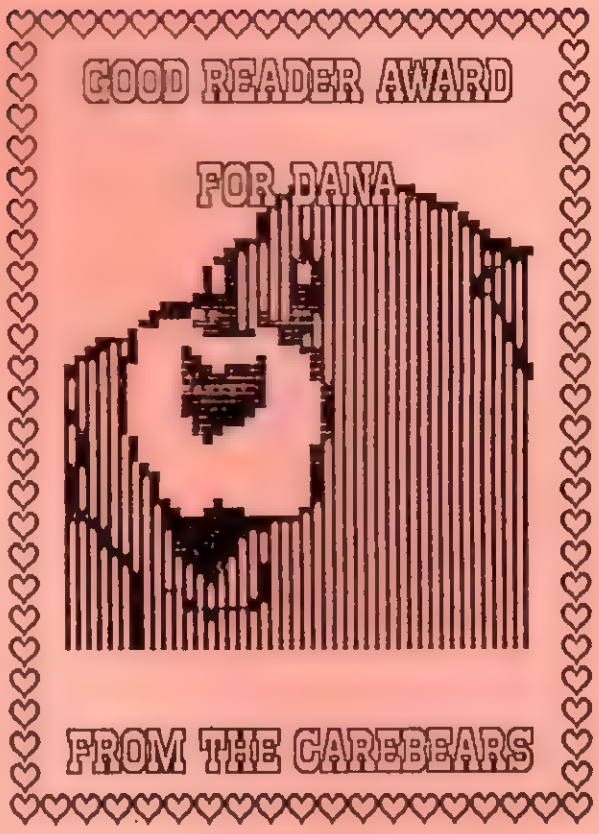


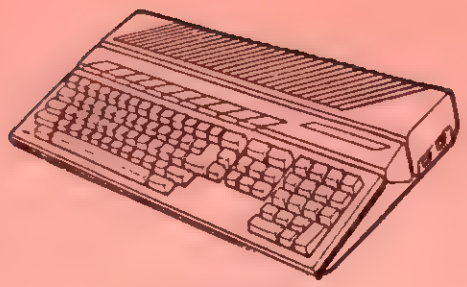
Figure 4

The mechanics of making the icon are fairly simple. After loading the picture, GS asks you whether you want a full screen icon or a partial screen. The partial screen is one size and cannot be altered even within the same ratio. (This would make this an even better program and allow you to get just that portion of the graphic you want.) GS then illustrates all the different white, black, and pattern fills so that you can select the one that pleases you most to create the icon. GS then will convert the graphic and will format a disk in the PS format if you need it before it writes the converted icon.

The graphics you use need not be created with MicroIllustrator (i.e. Koala Pad, Atari Touch Tablet, Atari Light Pen, etc.) or Micropainter - the two formats supported by GS. You can use just about any graphics program you have to create the graphic, then just convert it using the graphics converter program which recently ran in ANTIC magazine (November '85). Figure #1 was created using the Koala Pad and the RAMbrandt graphics package which allows you to save your work in either of the two formats (MicroIllustrator or Micropainter). Graphic Shop sells for $19.95 from the ANTIC Catalog and makes an excelent companion to the Print Shop program.

GIVE A BIT!!!

Contribute to the Newsletter this month



ST Talk

by James T. Budelman - JACG

Well folks, my work has kept me too busy to get very far with with my ST. This month I want to tell you about a new product from our old friends at OSS and say some words about ST Basic which finally arrived. In their time honored fashion, OSS has come up with what looks to be a winner! The title is PERSONAL PASCAL. This is a full featured pascal with GEM interface and REAL Numbers(a subset of the fullrange possible, 11 digits of mantissa and an exponent of +-38). I am very interested in this product, so you will doubtless hear much about it as I get time to use it. However, I won't dote on it because everyone will not have it. Anyway, it comes with a fairly comprehensive manual and has such features as random (direct) files without which I find programming much more tedious than it has to be.

Having gotten somewhat further in reading the material in the Atari development Kit, I find that my surmise about the fill patterns is correct. LOGO uses the fill patterns exactly as they are implemented in the GEM (VDI?) system. This means that I can create my fill pattern editor program in a language I am familiar with, save the file and have LOGO use that pattern- a good example of language independent graphics.

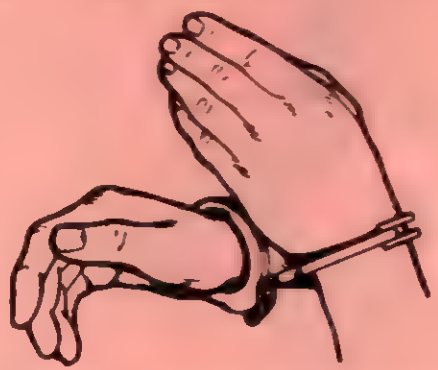
A little about the ST Basic and then I will sign off for this month. Basic comes with a large manual and a full operations interface reminiscent of LOGO's. It has a built in GEM interface and has some examples in the back. Like pascal, it has random files and is built to allow modular composition of programs. I will spend much time exploring the ST using this language, much as I have on the 800. You will, therefore, see many Basic programs in this column. Just to see how fast this basic was, I created an empty loop and ran it. It was very fast. I had to move the number of iterations up to 5000 before I could be certain that there was not more error in the timing (stopwatch) than there was counting time. 5000 iterations took 5 seconds. By comparison, the 800 took almost 15 seconds. The program I used was:

```
2 N=5000
10 FOR I=1 TO N
100 NEXT I
199 PRINT I
200 END
```

While I understand this is not a good benchmark, I was just looking for a quick raw idea of the relative speed. Either basic could be optimized for such a test so in another column I will explore timings in more depth.

Next month, more on basic.

GREAT MOMENTS IN DATA PROCESSING:
300 A.D. - THE NAVAJO INDIANS DEVELOP THE FIRST 100%, ALL-WOOLEN WORD PROCESSOR.



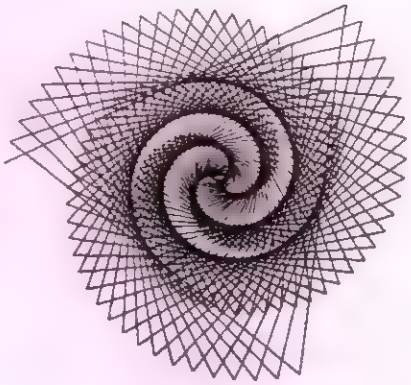
TAKE OFF YOUR HANDCUFFS!
and write an article
for the newsletter!

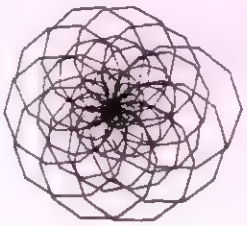
Trigonometric Art
With The 1020 Plotter

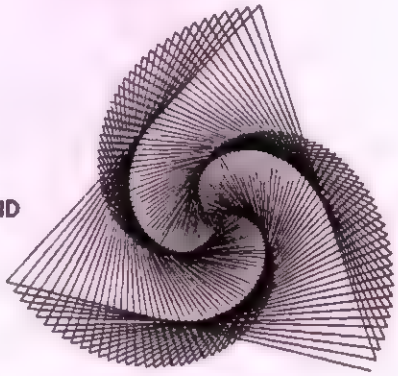
by D. Kramer - BACE

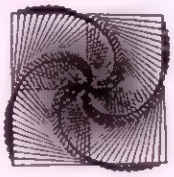
```
100 REM >>                              <<
110 REM >>    BASIC TRIG ART  2.0       <<
120 REM >>                              <<
130 REM >>    by  D. KRAMER  BACE       <<
140 REM >>                              <<
150 REM >>    REQUIRES ATARI 1020       <<
160 REM >>                              <<
170 GOSUB 500
180 REM >>          MAIN LOOP           <<
190 A=R*C
200 XN=X-L*COS(A):YN=Y-L*SIN(A)
210 ? #2;"D";XN;",";YN
220 X=XN:Y=YN
230 FOR Z=1 TO S-1
240 A=A+DA
250 XN=X-L*COS(A):YN=Y-L*SIN(A)
260 ? #2;"D";XN;",";YN
270 X=XN:Y=YN
280 NEXT Z
290 C=C+1:L=L+I
300 IF L>MAXL THEN 330
310 IF PEEK(764)=18 THEN POKE 764,255:GOSUB 420
320 GOTO 190
330 ? "}":? :? :? "PRESS OPTION TO EXIT PROGRAM."
340 ? :? "PRESS START TO RUN PROGRAM AGAIN."
350 IF PEEK(53279)=3 THEN ? #2;"M0,-600*C0":CLOSE #2:END
360 IF PEEK(53279)<>6 THEN 350
370 POKE 53279,7
380 ? #2;"M0,-600"
390 CLOSE #2
400 GOTO 170
410 REM >>          PEN CHANGE          <<
420 ? :? :? "}TO CHANGE COLOR OF PLOT INPUT NEW PEN NUMBER(0-3)."
430 ? :? "PEN COLOR":? "0->BLACK  1->BLUE   2->GREEN  3->RED"
440 ? :? "WHAT IS THE NEW PEN COLOR";:INPUT PC
450 ? #2;"C";PC
460 ? :? :? "CONTINUING THE PLOT..."
470 POKE 764,255
480 RETURN
490 REM >>       INITIALIZATION       <<
500 DEG :TRAP 330
510 ? "}BASIC TRIG ART w/1020 PRINTER-PLOTTER."
520 ? :? "PEN COLOR":? "0->BLACK  1->BLUE   2->GREEN  3->RED"
530 ? :? "TO CHANGE PEN COLOR AFTER START OF    PLOT PRESS 'C' THEN SUPPLY PEN N
UMBER (0-3)."
540 ? :? "WITH WHAT PEN COLOR DO YOU WISH TO    START THE PLOT";:INPUT PC
550 ? "}":? "YOU WILL BE REQUIRED TO INPUT A NUMBEROF SIDES, AN INITIAL SIDE LEN
GTH, A   LENGTH INCREMENT, AND ";
560 ? " A ROTATIONAL   ANGLE."
570 ? :? "I RECOMMEND:":? " SIDES  1-10":? " LENGTH  -2 TO 2":? " INCREMENT -2 T
O 2"
580 ? " ROTATIONAL ANGLE  20,30,45,60,72,90,   120,144,180 PLUS OR MINUS 0 TO 3
    DEGREES"
590 ? :? "WHAT ARE YOUR INPUT VALUES(S,L,I,R)";:INPUT S,L,I,R
600 LPRINT "S","L","I","R"
610 LPRINT S,L,I,R
620 DA=360/S:MAXL=210-S*17
630 X=240:Y=-240:A=0:C=1
640 OPEN #2,8,0,"P:":? #2;""
650 ? #2;"C";PC
660 ? #2;"M";X;",";Y
670 ? :? "PLOTTING..."
680 RETURN
```

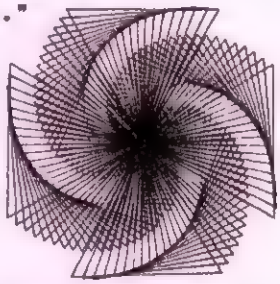
S L I R
1 2 1 122

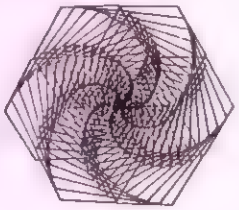


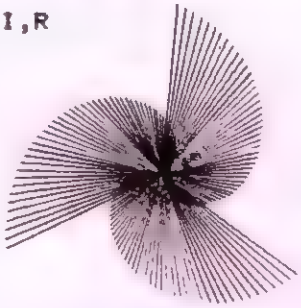












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Six Color Printing With A Monochrome Printer

by Bill Zinn - A.B.A.C.U.S.

One day while exploring graphics printing on my Star SG10 I made a fortuitous discovery. Suddenly the hours spent mastering the new machine seemed worthwhile. I had been pleased with Print Shop and Print Wiz, learning about the wonders of double, triple, and quad density graphics. While checking the programs on the ABACUS Disk of the Month, # 59, I printed a Koala pad picture using KOLADUMP.BAS. This program which had been downloaded from a bulletin board loads in a Koala-format picture, prints it to the screen, and then converts the colors to four shades (luminance levels) of gray. You can change any of these shades by selecting from among a range of five levels of gray which appear in a menu line at the screen bottom. For example, a black background, which would shorten the life of a printer ribbon, can be inverted to white and the other shades changed to balance the picture. Pressing "P" dumps a full sized picture to the printer (It is rotated 90° to fit on the paper.) Having bought color ribbons I decided to try printing one picture in green when the realization dawned that if each shade could be independently printed with a different color ribbon the result could be a close approximation of the 4-color Koala screen image.

Many trials revealed that if the ribbon colors are primary (red, yellow, and blue), mixing them could produce the secondary colors, (orange, violet and green). This could be done using the pattern paint pots, the boxes along the bottom of the Micro-Illustrator Menu screen. If the basic colors (the 4 boxes right above the pattern color boxes) are the primary colors, then orange, green and violet can be added to the palette. If the fourth color (the background color in the left box) is white then each of the primary colors will also have a light or pastel version to work with. For example, If the basic color paint pots are set up (from the left) as white, yellow, red and blue then the texture pots below will be (also from left to right) light yellow, light red, light blue, orange, green, violet, followed by pots which have checkerboard textures without a predominating hue. So any picture could be printed in up to six colors with three passes on the printer (and three ribbon changes--Epson and other cartridge printer owners will appreciate the convenience of ribbon cartridges though not the cost).

How To Do It:

1. Load the Koala picture using KOLADUMP.BAS; note which parts of the picture have been drawn with each primary color. The picture will then be converted to shades of gray (That process can be speeded by pressing <RETURN>).

2. Load the yellow ribbon in the printer. Load the paper and make a mark on the carrier strip to align with some landmark on the printer so that after each pass you can pull

the paper back through and start it at exactly the same place. One way to assure this proper registration is to place single pixels of yellow, red, and blue right next to each other at the lower right hand corner of the Koala picture. As the printer is printing the first line of the second and third colors, hold down the off-line button on the printer to pause it after it prints the first line. If the color dot just printed is not adjacent to the dot printed in the previous color then adjust the paper accordingly, and put the printer back on line to continue printing. REMEMBER: make sure the paper has a smooth path into and out of the printer and do not touch it during printing. This will avoid tiny unprinted lines which are especially annoying in large solid portions of the picture.

3. Find the area in the picture which was yellow and is now a gray shade (probably the lightest shade). Find the corresponding shade among the four shader bars at the bottom of the screen. (See illustration above.) Above that shade will be its number. Press that number on the keyboard and you will be prompted to choose another number which will select a new shade from 1 (Black) to 5 (white). Select 1 for a saturated (deep) color or 2 through 4 for a lighter shade (to make your ribbon last longer). Now change all the other shades to white (5) so that only the yellow area will print on this first pass through the printer.

4. After the yellow is printed, lift the paper away from the tractor pins, pull it back through the printer and reset it in the tractor at a point just behind the top-of-form. Use the line feed button to advance it until the mark you made on the carrier strip is lined up with the landmark on the printer. Use the platen knob only if you can not otherwise align the paper. Change to the red ribbon.

5. Restore the screen picture to the original gray shades. If you cannot remember them type E to Exit and reload your picture. Repeat steps 3 and 4 with the portion of the picture which was red and then again for the blue portion.

If you have been careful to return the paper to the same starting point each time you should have a flawless six color picture. If not, remind your viewers that small flaws are the hallmark of human creativity.

NOISE from NOYES

by Dave Noyes - JACG

FREEWARE - A Look at the Public Domain

I can't even guess how much money is spent by home computer owners on software each year - but the amount must be astronomical. Games, education, telecommunications, utilities, applications, and graphics are, of course, the main categories. A considerable portion of this software is attractively packaged and agressively marketed. You, the purchaser, subsidize, with an adder, every step from concept to purchase. As precious few owners of ATARIs have unlimited resources, the aquisition of software often comes into conflict with other, almost as important things, such as food and heat. What can be done? I thought you would never ask!

Enter the Public Domain. Enter the world of free, and almost free software. Where is this ware - you ask? Look around; the JACG library is burgeoning with disks just loaded with an unimaginable array of goodies; and for the price of $5.00 a disk. ANTIC, ANALOG, COMPUTE and HOME COMPUTER MAGAZINE all have type-in programs in each issue. Many bulletin boards (such as our own) perform yeoman service in the dissemination of this bounty. Ah, one says, it is mostly basic, mostly bugged, and mostly unsophisticated. NOT NECESSARILY SO.

A few for instances. I have found nothing that Financial Cookbook can do for me that I have been unable to do with several PD programs. COMPUTE's Speedscript does for me everything that I need to do with ATARIWRITER. COMPUTE now has published Speedcalc; it probably does everything for me that I needed when I bought Visicalc. Myriapede gives me the same challenge as Centipede. I have found AMODEM 7.2 to be as complete a terminal program as I will probably ever need. Need to tune your guitar, adjust your color TV, teach math and spelling to your children? Get the point? SOFTSIDE magazine (now gone) published a database program which I have found quite satisfactory. There are programs to balance checkbooks, list names, addresses, and phone #'s; you can survey the energy efficiency of your house, or catalog your growing library of disks.

To see just how large the world of Public Domain really is (and I can't do justice to the comprehensiveness of what is available), one need look no further than the listing of disks in the JACG library. One need look no further than the magazines I have mentioned. One need to look no further than the books on the shelf (in the ATARI section, of course) of your favorite computer or book store. Now, I am not inferring that all one's software needs will be satisfied in this fashion; what I suggest is that for each need satisfied by utilization of the Public Domain, one's limited resources become more available for that super piece of software that just came out and without which one simply can't live.

Next in NOISE from NOYES:

What's Wrong Now? or, Learning From Scratch

Ultima V Flight Simulator

Newsletter Editor Frank Pazel is shown at the controls of the latest piece of 64K XL/XE software which might finally solve the problems he has been having with flight simulators. An amazing piece of work, the package comes with this realistic looking inflatable cockpit, which cuts way back on learning curve time. Modeled after a C-141 Frank reports he learned to take off, navigate, and do barrel rolls in less than fifteen minutes. The only drawback seems to be storage. This prototype, once inflated, took up approximately 37 neighborhood garages.

Chop Suey Forth

(Part two of three)
By Donald Forbes -- JACG

Lee: I am glad to see that the Atari computer can print out the menus for my Chinese restaurant.

That's fine. But how about having the computer translate the English name of the dish into Chinese, so that our good-looking young waitresses who don't speak Chinese can give the order to Tai See Foo, my master chef behind the counter?

Don: That sounds more difficult, Lee. Do you have any suggestions?

L: Well, Chinese only has about 800 monosyllables, but they can be used to make about 3200 words by pronouncing them with four different tones. There is a level tone, and a falling tone, and a rising tone, and a 'falling then rising' tone. The word MAI means 'buy' with one tone but 'sell' with another tone, and MA can mean 'horse' or 'mother' depending on the tone. As you know, in English the word YES can take on different meanings depending on the inflection -- agreement, surprise, or incredulity. Western people do not realize that Chinese people do not speak Chinese, they have to sing it!

Doesn't the Atari have four voices? If so, you should then be able to simulate the tones. The level or flat tone is G above middle C on the piano keyboard. The second tone rises from E up to G. The third drops from D to C and then rises to G. The fourth tone falls from G to C. We ought to be able to do something with that.

D: That does not sound too difficult. We could program a DO...LOOP for each tone, and then use a delay loop and a word to shut off each tone.

```
DECIMAL : SS 0 0 0 0 SOUND ;
: WA ( wait) 500 0 DO LOOP ;
: WW ( wait) 1000 0 DO LOOP ;
: 1ST 243 217 DO 0 162 10 8
  SOUND WW LOOP SS WW ;
: 2ND 162 193 DO 0 I 10 8 SOUND
  WW -1 +LOOP SS WW ;
: 3RD 243 217 DO 0 I 10 8 SOUND
  WW 5 +LOOP 173 243 DO 0 I 10 8
  SOUND WW -5 +LOOP SS WW ;
: 4TH 243 162 DO 0 I 10 8 SOUND
  WA 2 +LOOP SS WW ;
```

You see that SS turns off the sound, WA is a short wait, and WW is a longer wait. Now we can build a short vocabulary that we can display on the screen, and follow each word with a clue to the tone--a hyphen for the flat tone, a slash for the rising tone, a period for the falling-then-rising tone, and a backward slash for the falling tone.

```
: PEKING ." Bei.Jing-" 3RD WW 1ST ;
: HOTEL ." Lu.Guan." 3RD 3RD ;
: IS ." Zai\" 4TH ;
: WHERE ." Nar." 3RD ;
: CHINESE ." Zhung-Guo/" 1ST 2ND ;
: YOU ." Ni." 3RD ;
: MAN ." Nan/Ren/" 2ND 2ND ;
: RESTAURANT ." Fan\Guar." 4TH 3RD ;
: TELEPHONE ." Dian\Hua\" 4TH 4TH ;
: HOW-MUCH ." Duo-Shao." 1ST WA 3RD ;
: GOOD ." Hao." 3RD ;
: NOT ." Bu\" 4TH ;
: AGAIN ." Zai\" 4TH ;
: SEE ." Jian\" 4TH ;
```

All we have to do is type the English words to get the Chinese equivalents on the screen with their proper tones. The waitresses can now talk to the customers. If she wants to say 'hello' she has only to type YOU GOOD NOT GOOD and the screen will come back with NI HAU BU HAU and the proper intonation. She can say 'goodbye' (again see) or even ask questions like (Chinese restaurant is where) or (telephone is how-much) or (hotel is where). If we go through the menu and program the names of the dishes with the proper tones, then the chef should have no difficulty.

L: Looks super! What other ideas can you come up with?

D: Well, I thought I read somewhere that the Chinese people love rabbit stew. Ekkehard Floegel here on page 50 of his book 'Forth on the Atari' has a program to compute the terms of a Fibonacci series which starts as 1,1,2,3,5,8,13....and so on. In the eleven hundreds in Italy there was a fellow called Bonaccio who lived in Pisa where they have the tower that keeps leaning more and more from year to year. He had a son he called Leonardo who was usually referred to as Leonardo of Pisa the son of Bonaccio, or Leonardo Pisano filius Bonaccio. In 1202 Leonardo, who was probably the most distinguished mathematician of the Middle Ages, published an important work entitled 'Liber Abaci' or Book of the Abacus. It performed an invaluable service by spreading throughout Europe the use of Hindu-Arabic numerals in arithmetic operations. But the book is best remembered for its presentation of the following puzzle:

A certain man put a pair of rabbits in a place enclosed on all sides by a wall. How many pairs of rabbits will be born there in the course of one year if it is assumed that every month a pair of rabbits produces another pair, and that all new rabbits begin to bear young two months after their own birth?

The mathematicians became interested in this numerical series because it arises in other contexts, and called it a Fibonacci series. We could use it to figure out how many rabbits you would have each month to make Chinese rabbit stew. The code is quite short, but the numbers get quite big--you know how fast rabbits are able to multiply. What sounds complicated is really quite simple--the next number in the series is always the sum of the two numbers before it.

```
: FIBONACCI ( n - )
  CR 0 1 BEGIN DUP >R ROT DUP R>
  > WHILE ROT ROT DUP ROT + DUP .
  REPEAT DROP DROP DROP ;
```

Kenneth Pietrucha, my friend from the JACG in New Jersey, who is an expert on number theory and recreational mathematics, has published an alternative FORTH version as well as the BASIC code that it imitates.

```
: FIBONACCI-TWO  1 DUP DUP DUP CR
  . CR . CR 22 1 DO DUP ROT + DUP
  . CR LOOP DROP DROP ;
```

```
10 A=1:B=1:PRINT A: PRINT B
20 C=A+B:PRINT C
30 A=B:B=C
40 GOTO 20
```

Because the rabbits multiply so fast, Ken even worked out a double precision version.

```
: ROLL DUP 1 = IF DROP ELSE DUP 1
  DO SWAP R> R> ROT >R >R >R LOOP
  1 DO R> R> R> ROT ROT >R >R
  SWAP LOOP THEN ;
: PICK 2* SP@ + @ ;
: 2DUP OVER OVER ;
: 2DROP DROP DROP ;
: 2SWAP >R ROT ROT R> ROT ROT ;
: 2ROT 6 ROLL 6 ROLL ;
: UD. \ double-length unsigned
  <# #S #> TYPE SPACE ;
: UDFIB \ print 47th Fibonacci #
  1. 2DUP 2DUP 2DUP CR UD. CR UD.
  CR 46 1 DO 2DUP 2ROT D+ 2DUP UD.
  CR LOOP 2DROP 2DROP ;
```

The program will print out the 47th number in the series which is 2,971,215,073 which is a lot of rabbits in less than four years.

L: That seems a little far-fetched, Don. I am certain that Leonardo's rabbit problem is a manufactured situation. The Great Wall of China is the only man-made structure that is visible from outer space. And I am sure that even that wall would not be big enough to hold all those rabbits. Furthermore, I have never even heard of Chinese rabbit stew. What other ideas can you come up with?

D: I thought, Lee, that we could offer an inducement to each prospective customer by giving away a free meal depending on the number of the sales check. For example, if the check number was a prime number then he would get a free meal. Here is a program to compute all the prime numbers up to 32000 within the range of two limits that we specify ahead of time.

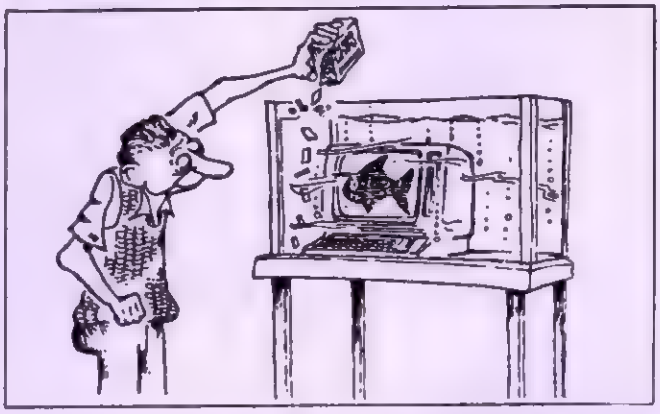
```
4 VARIABLE #ROW
: TEST ( n-f) MOD 0= ;
: PRINT-PRIME-NUMBER ( n - n )
  DUP 5 .R #ROW @ DUP 0= IF CR DROP
  4 ELSE 1 - THEN #ROW ! ;
: TEST-FOR-PRIME ( n - )
  DUP 2 / 2 DO DUP I TEST IF 0
  LEAVE THEN LOOP DUP IF
  PRINT-PRIME-NUMBER ELSE DROP
  THEN DROP ;
: PRIME ( n n1 - ) CR 4 #ROW
  DO I TEST-FOR-PRIME LOOP CR ;
```

For example, we can then do

```
400 380 PRIME
383 389 397 ok
9000 8950 PRIME
8951 8963 8969 8971 8999 ok
```

L: That is an idea, but I would rather find ways to make some money from the restaurant instead of giving away free meals. What other suggestions can you come up with?

D: I have some great sound effects that you will just love! Will have them for you this time next month. See you then. Again see -- Zai Jian!



PDG

by Joseph S. Kennedy

The theme for the April meeting is Graphics. For this month's article I'll go back to our original format of describing several programs in detail. We'll look at a Print Shop utility, some Print Shop graphics and a golf game. No!! Don't shudder at the word game; you're allowed to enjoy your Atari. Don't be ashamed that you have the best game machine on the market in addition to the best 8-bit computer. Come out of the closet and play games on your Atari proudly.

The Print Shop utility that we're going to look at is Printool from Volume #077. Printool is written in Action by Dave Oblad, but is on Volume #077 as a DOS "L" loadable program. Printool allows you several options. You can:

- View all Print Shop graphics on a disk.

- Change the picture to an Atari DOS format.

- View the pictures that are in Atari format.

- Change an Atari Dos format to a Print Shop file.

These functions allow you to transfer files over a modem to share your original graphics with other Atarians. Unfortunately, Printool does not work on Screen Magic files. (If you want to convert Screen Magic files there is a file on Compuserve called PSPIC that allows this.)

But you don't need to call up your local BBS to get Print Shop graphics, you can use Volumes #076 and #080 of the disk library. On these two you'll find the Print Shop Graphics compiled by JACS (Jersey Atari Computer Society). On Volume #076 my favorites are YOU, GARFIELD2, PAGODA and GLOBE. On Volume #080 they are AM GOTHIC, GIRL, SHIP2 and PYRAMID. These disks can go a long ways to making your Print Shop even more useful.

Finally let's look at GOLF on Volume #089. With this program you get to play golf on several different holes that include roughs, trees, sand traps, and water hazards. After telling the computer how many people are playing (up to 4 can play), you get the hole number, the par for that hole, and the distance for the hole. Remember the distance as you will need it later to determine how hard to hit the puck. After reading this information, press the joystick button to be at the hole. You will see the computer draw the hole. Then approach the tee with your little golfer. The direction the ball will fly is indicated by degrees. Right is 0; left is +180; up is +90 and down is -90. After you have the direction hold down the joystick button until the power level you want is reached. Then release the button to hit the ball. On the fairways the ball will fly approximately 270 yards. Sand traps and rough reduce the distance approximately 30%. Keep your head down; good luck and remember you may not break par but with this golf program you will be able to walk on water.

```
**************
*     J      *
*GIVE A BIT!!*
*     C      *
*     G      *
**************
```

Very Interesting...

by Brian and Ty Klock - JACS

Tired of typing in GRAPHICS 8? Try this:

GR.1

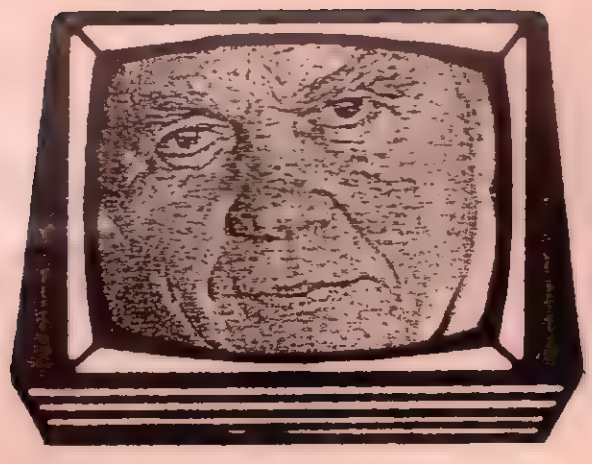
Once you have the standard GRAPHICS 1 screen type L. and press the RETURN and BREAK keys at the same time. You may have to try this several times (practice makes perfect). When you are successful the cursor will disappear! Very interesting. Now press a few keys to type text directly on the screen in the elongated letters of GRAPHICS 1. The text is yellow. However, with a quick press of the ATARI symbol key you can now type in blue. Press the CAPS/LOWR key and type in red. Press the ATARI symbol key again and type in light green. Using the CTRL and SHIFT keys in conjunction with the other keys gives rise to all sorts of symbols. And since the editing functions work, it is possible to draw directly on the screen any design you wish. Screen space is at a premium, however, and an error 148 soon appears.

The above procedure also works for GRAPHICS 2 and 98 (98??). And for a special treat try GRAPHICS 99. The result is truly on the "square".

A Few Notes About The Authors

My son Brian and I have never written an article for JACS before, even though I have been a "taker" for a number of years. I purchased my "Old Beige" some four or five years ago for $700+ (actually it was a Christmas gift from my wife to keep me out of mischief). Ah, yes. The good old days. When PAC-MAN was the only game in town and STAR RAIDERS cost $43.95. My son was only three and the first word he learned to spell was RUN. He is now eight and it was he who discovered this edition of "Very Interesting". I have since gone on to teach an introductory computer course using ATARI 800 and 800 XL computers at a local high school. I also teach several other computer science courses using the infamous IBM PC, but that's another story. Until next time, may the force be with you.

P.S. Is it true that NBI stands for Nothing But Initials?



A Comment From Andy!

A Parody of
"A Few Minutes With Andy Rooney"

J'ever notice all the fuss everyone is making over computers these days? It seems you can't go anywhere without hearing "home computer this" and "personal computer that". Why is that? What's so great about computers, anyway?

J'ever notice everyone says "you need a computer" or "nine in ten homes will soon have a computer"? Why do I need a computer? And why will nine in ten homes have one? Is the government going to pass a law or something? Right now, the only one on my block that has one is seventeen years old, weighs ninety-eight pounds, wear glasses and has acne. He is a "NERD". J'ever notice how popular NERDS have become? Why is that? Maybe because they have computers, which are popular too. If I buy a computer, will I become popular? Or will I become a NERD?

J'ever notice there are "home" computers and there are "personal" computers? Why is that? Are they the same or are they different? Can you use a home computer outside your home? Do you have to keep a personal computer to yourself, or can you share it with your friends? There are also "LAP-TOP" computers. Are they for people who can't affod a desk?

J'ever notice people who use computers are called "HACKERS"? Just what is a hacker, anyway? To me, it sounds like someone you wouldn't want to meet in a dark alleyway. When I think of HACKER, I think of Jason in "Friday the 13th". He hacked people with a large knife and lived in the woods. Did he have a computer? Was it a "FOREST" computer?

J'ever notice that if a computer is easy to understand it is called "USER FRIENDLY"? Why is that? Does that mean that easy to understand is the same as friendly? If Jason comes up to me and says, "I'm going to hack you up with my knife", I can sure UNDERSTAND him, but I don't think he is very FRIENDLY. Why is that?

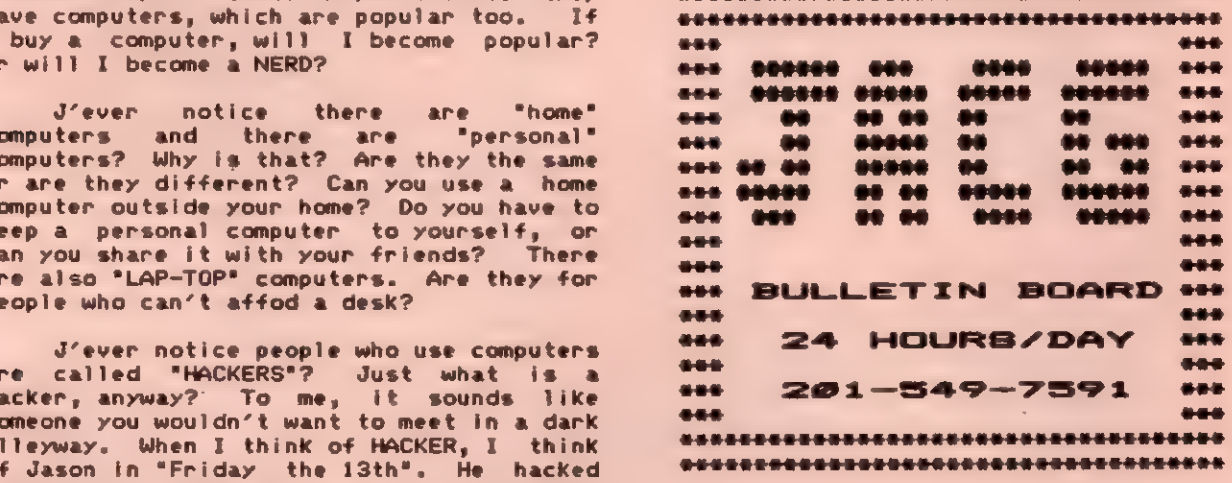
My friend, the Nerd, once told me, "My computer speaks BASIC, FORTRAN, and LISP." I don't know about BASIC and FORTRAN, but if his computer has a LISP, why doesn't he take it to a speech therapist? Come to think of it, the Nerd has a lisp, too.

J'ever notice all those computer commercials on TV? Alan Alda showed how easy to understand an ATARI computer is. Atari must be "friendly". William Shatner presses a button on a Commodore computer and he disintegrates! Commodore doesn't sound very friendly to me. Maybe Jason has one. Charlie Chaplin does a commercial for IBM. Why is that? I mean, he was born in the 1800s. They didn't even have computers then.

And finally, j'ever notice how stupid they name computers nowadays? They used to call them ENIAC or UNIVAC. I could relate to that. But now they are called things like Apples or Oranges or Apricots. When I eat apricots I get the runs. If I use an Apricot computer will I get the runs? Then you've got the TI 99/4A. What the heck is a 99/4A, anyway? Isn't that Dolly Parton's size? The nerd has a TRS-80, but he calls it a TRASH-80. If it was trash, why did he buy it in the first place? Do only nerds buy TRASH-80s?

Well, that about does it for now. J'ever notice how many times I say "J'ever notice"? Why is that? J'ever notice I always say "Why is that"? Why is that?

Reprinted from May 1985 HACK
Atari Anonymous of Rhode Island User Group



HAVE YOU RENEWED YOUR MEMBERSHIP?

CHECK YOUR MAILING LABEL
FOR MEMBERSHIP EXPIRATION DATE

Adventures In Printing With AtariWriter Plus

by Marty Stickle - JACG

With eager anticipation, I carried home my new copy of AtariWriter Plus from the February meeting of the JACG. Having become aware of some of the drawbacks of Letter Perfect during the previous two years of word processing, I was positively chafing at the bit to get started with this new and promising program from Atari Corp.

After a relatively short look at the very well-written and blessedly short documentation, off I went, writing away. Everything went well until it was time to put my trusty printer to the test. My Mannesmann Tally Spirit 80 (which I love by the way) refused to print in anything resembling English. No problem, I thought, I'll just use the Epson FX-80 printer driver provided on the AtariWriter disk. This worked somewhat, but the program insisted on putting a zero at the top of every file, and refused to print subscripts, etc. So now it was off to the endless task of designing a custom printer driver which would work for my printer and which would also work for the "clone" printers, the CTI, BMC printers (sold through the club bulk purchase), and also with the Epson MX-80 that all my neighbors seem to have.

After many hours of trial and error, and after coming close to taking a chain saw to my computer (Remember those cute commercials for some other obscure computer named after a fruit?), I finally have managed to construct a printer driver that works. I have tried this driver on an Epson MX-80, CTI printer and my Mannesmann Tally. Here are, I hope some simple directions for making your own printer driver.

First, you must load your AtariWriter program disk while holding down the Select key. This gives you the Custom Printer Editor menu (See page 44-47 of the manual). Hit the space bar and begin to enter the decimal codes for each of the items in the list. After each code, hit the return key, and hit return twice at the end of each category. Then proceed to move the cursor arrow down to each item until the driver is finished. Then hit S for save and give your driver a simple name (Try PD1). Save the driver to a formatted disk, and then when you are ready to print, follow the directions on page 48 to engage this driver. Here are the codes for each category:

Initialize every line: 27,85,0
Line Feed & carriage return: 141
Underline off: 27,45,0
Underline on: 27,45,1
Backspace: 8
Elongate off: 27,87,0
Elongate on: 27,87,1
Bold off: 27,72
Bold on: 27,71
Up 1/2 line (superscripts): 27,83,0
Down 1/2 line (subscripts): 27,83,1
Down 1/2 line & carriage return: blank
Return with no line feed: 141
Type font #1: 27,64
Type font #2(compressed): 15
Type font #3(emphasized): 27,69
Type font #4(double strike): 27,71
Type font #5(italics): 27,52

You can go on to define other fonts, such as international character sets, etc. by looking up the decimal codes in your printer manual.

A suggestion is to save a copy of your printer driver on every file disk that you use to store files created with AtariWriter Plus. Then you always have the driver available without swapping additional disks. In the meantime, happy word processing and please, don't ask me to make another printer driver. I think I'll use AtariWriter Plus forever, and avoid the problem again. Unless....

And Now.... The Rest of the Story
reported by Deep Throat

BULLETIN: In a move sure to shock the computer industry, Atari Corporation yesterday announced that they are dropping out of the computer field to concentrate on an entirely new electronic product. While not releasing any information as to the nature of their new venture, a spokesperson for Atari did reveal that rumors of a merger of Atari and Whamo were premature. Speculation to that effect surfaced last week when the Defense Department issued a memorandum calling for the development of a perpetual motion Hula Hoop. As the press spokesman at the Pentagon stated, "it is essential that we draw attention away from this country's lack of participation in the missions to Halley's comet, and this is the best diversion our think tank could come up with. In addition, we can use the revenue from sales to circumvent the Gramm-Rudman bill limiting expenditures." A decision on the winning bidder is expected early in April.

In a related piece of news, Atari Corporation named Art Leyenberger as its new public relations chairman. As Mr. Leyenberger said when interviewed at Newark airport on his way to Sunnyvale, "I believe I'll have no trouble working amiably with those guys, who are sunny and filled with riches." Upon hearing of Leyenberger's appointment, JACG newsletter editor Frank Pazel commented, "JACG will sorely miss Art, but he's had his heart set on this job for some time. We would have matched their salary offer, but Art wouldn't go for it." Mr. Leyenberger begins his new position on April 1st.

GIVE A BIT!!!

Contribute to the Newsletter this month.

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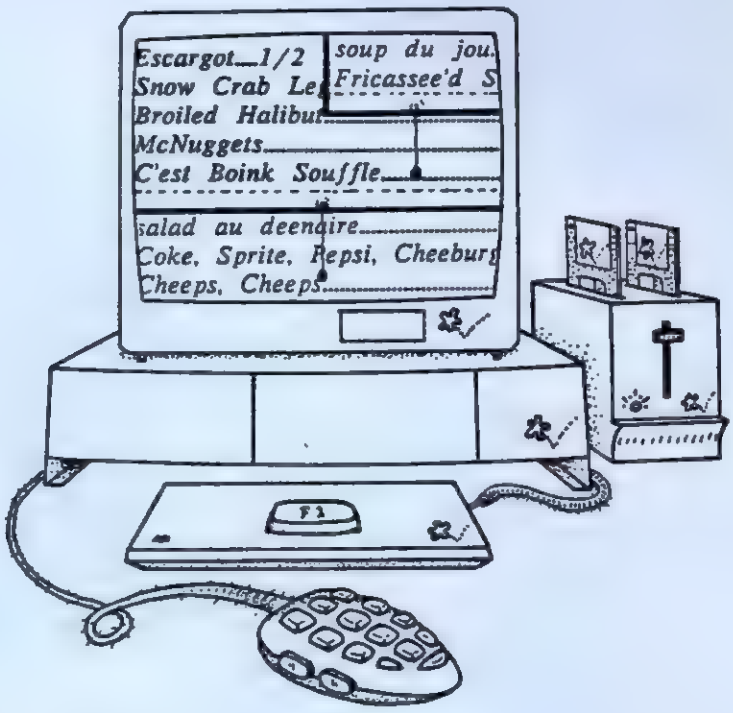

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Here's what the experts had to say:

"It'll be a sure-fire HIT!"
Larry Tribble, President,
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Clive Sinclair

"All you need is great graphics!"
Mike Zuwelb, owner,
"The Amoeba Store"
(formerly "The Spectra-Video Store")

Love Your Atari Spreadsheet

By Donald Forbes -- JACG

The hottest item in business software today is the spreadsheet. It is the first step toward getting all the paper off everybody's desktop and into the computer.

You don't know what a spreadsheet is?

You can buy Syncalc -- a professional documented version complete with plastic wrap -- at our flea market for only $21, as I did, and become a business executive overnight.

A spreadsheet is nothing more than the old accountant's worksheet. But there are a few differences.

The first difference is the size. Syncalc gives you 128 columns and 255 rows; nobody has a desk that big.

Second difference is that all the computations are automated. Change one number on the worksheet, and every other related number changes instantly (or at the speed of your Atari's 6502 chip).

Third difference is that you have powerful editing functions for moving and copying, as well as mathematical and financial and statistical functions.

Fourth difference is that you can have multiple worksheets located in different parts of your spreadsheet.

How does it work?

Load the disk. What you see is a set of column headings and row numbers like this:

```
A1
      A       B       C       D       E
1 MMMMMMMMM
2
3
```

The cursor (I used MMMMMMMMM) now takes up eight spaces in field A1 (the correct technical term is "cell"). With the CTRL and arrow keys you can move the cursor to any location. Notice how the address at top left keeps changing each time you move the cursor.

Everything in a computer must be either a letter or a number. In a spreadsheet, however, you have three choices: (1) letters that make up text, or (2) just numbers, or (3) expressions that can be converted to numbers. You must tell the spreadsheet what you want.

To enter letters, just type the text. Syncalc gives you a blue background. If the text begins with a number (like a street number), just begin with a " or quote mark.

To enter a number, just type the number. The SMART way, however, is to adopt the habit of beginning every number slot with a + or plus sign, because that sets up the spreadsheet to expect either a number or a formula (which can eventually be converted to a number). Syncalc then gives you a green background.

Note, too, that the cursor remembers the last direction of motion, so that when you fill in one slot it jumps to the next slot in the same direction.

Now that you know the basics, let us set up a simple household monthly budget. It will illustrate the main workings of most spreadsheets (Lotus 1-2-3 or Visicalc or Framework or PC-Calc). When you have seen one, you have seen them all.

Here is the spreadsheet:

```
      A        B        C        D
1  Expense  Budget   Actual    Var
2  -------  ------   ------    ---
3 Mortgage  832.00   832.00   0.00
4     Food  400.00   379.66  20.32
5  Car Pmt  202.30   202.30   0.00
6 Clothing  120.00    88.04  31.96
7
8    Total 1554.30  1502.00  52.30
9
10This is a sample spreadsheet.
11
```

Type in the headings in row one (hit CAPS LOWR to get lower case letters), and add the hyphens in row two. Then go down column A and add the labels. Notice how the cursor remembers the previous movement. To erase any field, type slash E and return (/E <ret>) to clear it.

Now go to column B and enter the first four numbers. Here we will let Syncalc compute the total. What Syncalc is looking for in cell B8 is @SUM(B3:B6) which tells it to add the numbers in column B from row 3 to row 6. We could type it in, and it would work. Don't do it.

This brings up an important point. There are two ways to do spreadsheets: the DUMB way and the SMART way. If you expect to get mileage out of spreadsheets, you want to do it the right way and not get into bad habits at the outset. Then when you get involved with the high-powered spreadsheets, you will not have anything to unlearn.

The first DUMB way is to use the OPTION key and the menu to execute your commands. You will notice that each command is interpreted at the top of the screen by a slash and a series of letters, so that /G A1 tells the cursor to GO TO A1. Be SMART and use the slash commands as soon as you can remember them, and use the menu only as a last resort.

The second DUMB way is to complete the formulas by typing in the field locations and thereby run the risk of multiple errors. The SMART way is to point at the field with the cursor, a much quicker and easier and safer way.

Now back to field B8. Type @SUM(and then move the cursor to field B3. Notice how the formula now reads @SUM(B3. Now type a colon and move the cursor to B6. The formula is now @SUM(B3:B6. Add the final parenthesis for @SUM(B3:B6) and press return. The total appears instantly. (Change any number in the column, and the total changes with it. Give it a try.)

Now you can fill in the numbers for the ACTUAL in column C and set up the total the same way. For the VARIANCE in field D3 just type a plus sign (+) and then point the cursor to field B3 and then type a minus sign (-) and then point the cursor to field C3, and press return. Now you can complete column D.

Note the comment in field A10. This is a trick that is not in the manual. You can type as many as 37 characters per line and they will fit on the screen. You can type about 100 characters but then you will have to read the text across several screens. You

can use the spreadsheet as a crude wordprocessor. This is a handy documentation tool, if someone else will be using your spreadsheet. You could, for example, fill up the whole first screen with a set of working instructions.

Your budget is ready. What next? One simple command will let you copy the entire budget to the lower half of the screen, so that it could be the model for next month's budget. Another simple command will let you sort the whole worksheet so that the expenses appear in alphabetical order.

Syncalc also works with Atariwriter. That demo budget was worked on Syncalc and saved to disk (I had a formatted disk ready) as a text file with the name SPREAD.TXT. Then I brought up my Atariwriter and loaded SPREAD.TXT and sent it to the printer. This gave me a printed copy of the spreadsheet that I used while writing this article.

What can you do with a spreadsheet?

The loan officers at my favorite bank are using PCs on their desk and Lotus to make lending decisions: in a class exercise they were given financial statements for Apple and asked to come up with a bid price for the company as a whole, and given one hour to do the job. The bids ranged all the way from $500 million to $2 billion, but that was not the fault of Lotus!

My friend Hannah Blank had to move twice last year. When the movers arrived she gave them no instructions, but just handed them a set of sheets of paper. The head mover said: "I have been moving people for 20 years, but never saw anything like this!" Hannah had listed every carton and piece of furniture on a spreadsheet, giving room and location in the old house, and room and location in the new house, and sorted in the right order.

People use spreadsheets to calculate income taxes, set up budgets, balance a checkbook, do sales projections, compute financial ratios, do engineering analysis or cost estimates, or keep track of their coin collection. Since you can fit 30 characters in a field, you can also do mailing labels.

You already know how to use the spreadsheet to create outlines for your term papers, and do mathematical analysis, and play the stock market. Why not invent something really way out (a game, perhaps?) and write it up for the newsletter?

ORNJUCE (Orange Co., CA)

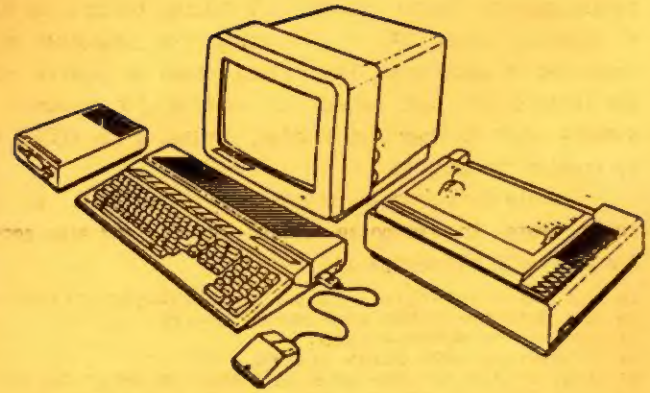
KEYBOARD DAZZLER

by Donald Krell - R.A.G. (CA)

This program was demonstrated at the August RAG meeting. It reads the keyboard as an input device and displays the character pressed as a 9x5 grid, accompanied by random sounds. Numbers appear in 2 colors; letters can have 4 colors. Lines 140 - 170 cause the character to be displayed in upper case, lower case, normal or inverse video for letters, or just normal or inverse for numbers or symbols with no lowercase display. Pressing the ESCAPE key terminates the program.

I wrote this program for my young daughter, so she could learn to recognize letter shapes and also become familiar with the keyboard.

```
10 DIM LTR(4):LTR(1)=0:LTR(2)=32:LTR(3)=128:LTR(4)=160
20 DIM NUMBR(4):NUMBR(1)=0:NUMBR(2)=128
30 NUMBR(3)=0:NUMBR(4)=128
40 ? CHR$(125):REM CLEAR SCREEN
50 OPEN #1,4,0,"K":REM OPEN KEYBOARD AS INPUT DEVICE
60 POKE 752,1:? "PRESS A KEY - PRESS ESC TO END PROGRAM";
62 GET #1,KEY:REM INPUT NUMBER OF KEY PRESSED
70 IF KEY=27 THEN END :REM END PROGRAM IF ESC PRESSED
80 IF KEY<33 THEN 60:REM IGNORE UNPRINTABLE CHARACTERS
90 GRAPHICS 2+16:REM BIG LETTERS
100 FOR X=1 TO 18 STEP 2:REM 9 LETTERS ACROSS
110 FOR Y=1 TO 10 STEP 2:REM 5 LETTERS DOWN
120 POSITION X,Y
130 SOUND 0,INT(RND(0)*255+1),10,10:REM RANDOM SOUND
140 N=INT(RND(0)*4)+1:REM RANDOM NUMBER USED FOR COLOR
150 IF KEY<65 THEN IT=KEY+NUMBR(N):GOTO 180
160 REM CHAR WAS NOT A LTTER - 2 POSSIBLE COLORS
170 IT=KEY+LTR(N):REM LETTERS CAN HAVE 4 COLORS
180 ? #6;CHR$(IT)
190 NEXT Y
200 NEXT X
210 GRAPHICS 0:SOUND 0,0,0,0:REM END DISPLAY
220 GOTO 60
```



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There are two easy ways to renew:

1. Fill out a membership renewal form in the front lobby before our monthly meeting and present it with $20 (in cash or check) to the Treasurer.

2. Copy the information on your mailing label and send, with $20, to:

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Dad, when you get done working with Space Invaders, can I play VisiCalc?

Thanks to GTIA via TAIG

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